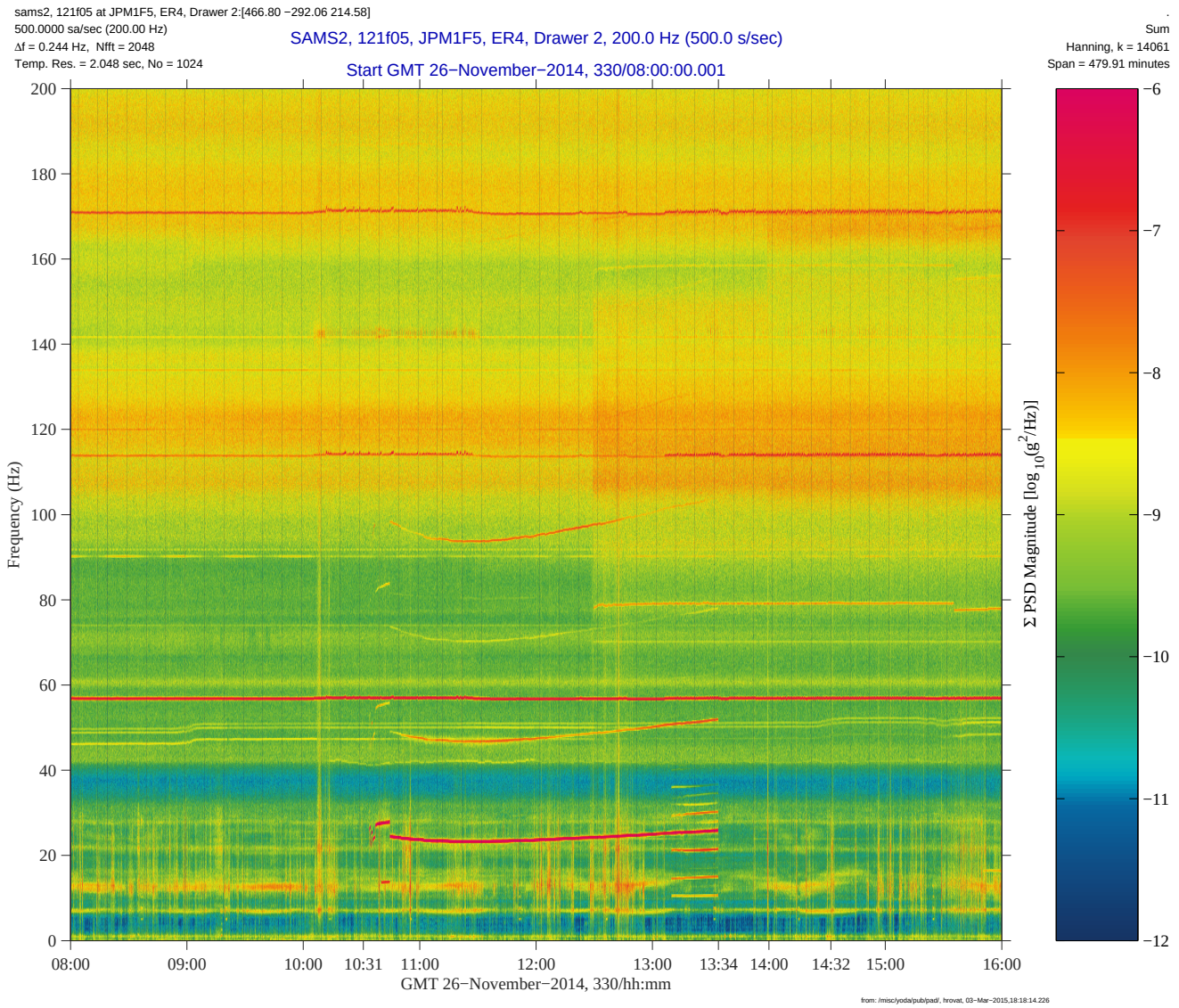
JEM Airlock Depress Vent Qualify



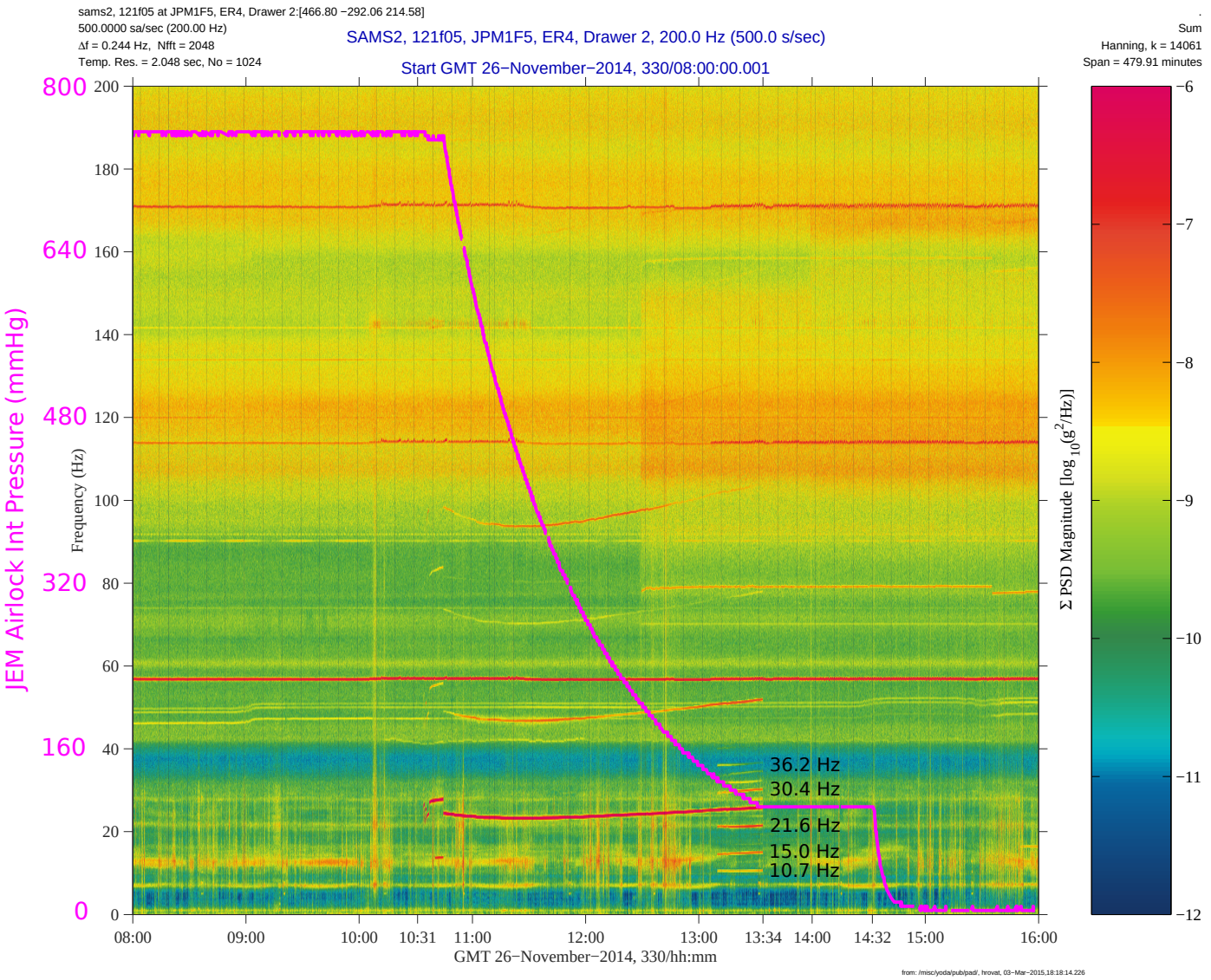
Description	
Sensor	SAMS 121f05 500.0 sa/sec, 200.0 Hz
Location	JPM1F5, ER4, Drawer 2
Plot Type	Spectrogram

Notes:

- This SAMS spectrogram clearly shows the JEM Airlock Depressurization activity between about GMT 10:31 and 13:34.
- The signature for this activity seems to primarily be the spectral peaks around 24 Hz, with 2nd through 4th harmonics. These are seen as the horizontal red streaks at those frequencies starting at about GMT 10:31.

Regime:	Vibratory
Category:	Equipment
Source:	JEM Airlock Depress Vent

JEM Airlock Depress Vent Qualify



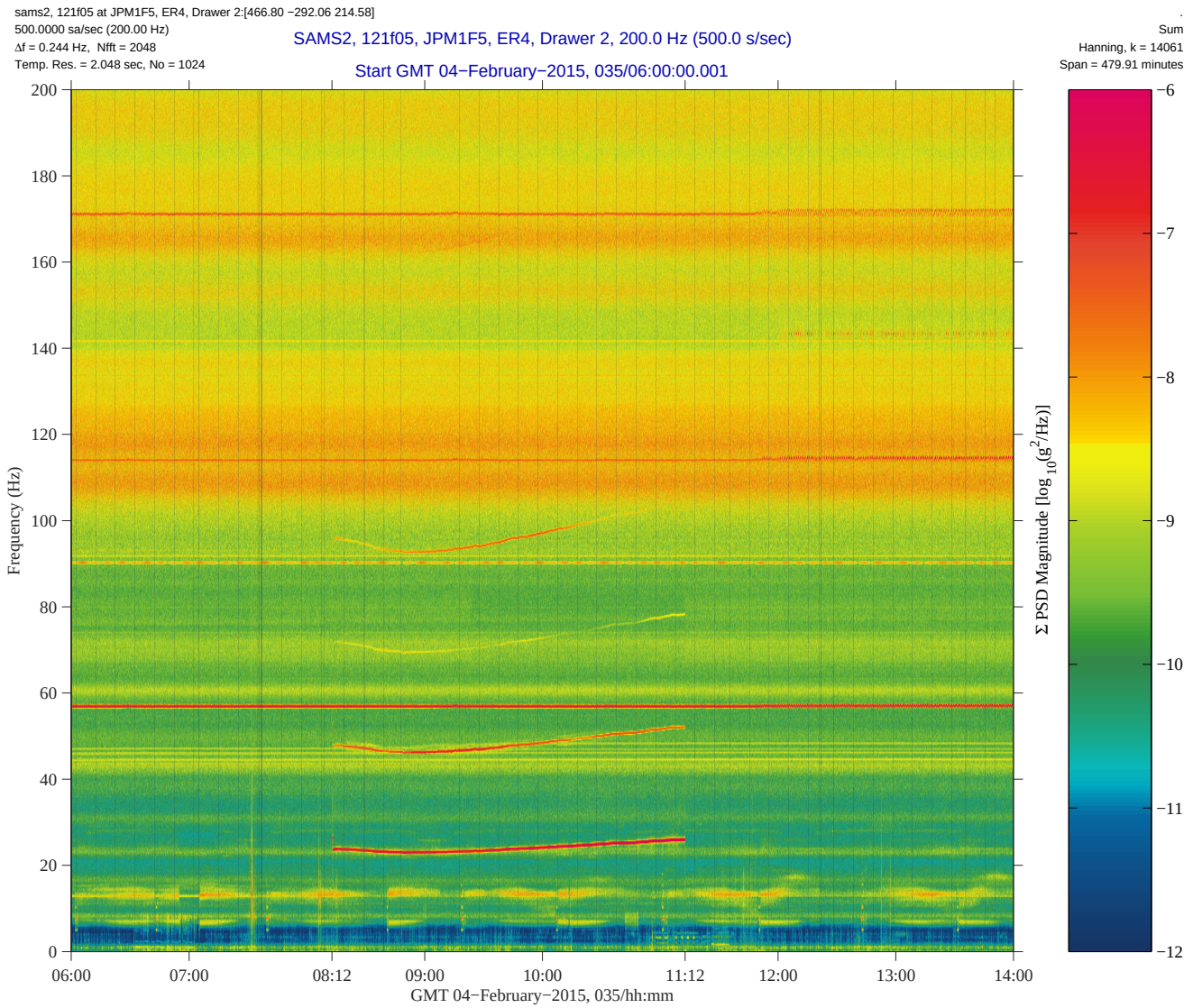
Description	
Sensor	SAMS 121f05 500.0 sa/sec, 200.0 Hz
Location	JPM1F5, ER4, Drawer 2
Plot Type	Spectrogram

Notes:

- This is the same spectrogram as seen unobstructed on the previous page.
- The obstruction here is an overlay of JEM Airlock pressure shown in the magenta trace.
- Note the strong correlation between the pressure shown in magenta, and the vibratory spectral signatures mentioned on the previous page (between about GMT 10:31 and 13:34).
- The correlation goes away when the pressure drops below about 100 mmHg. This can be seen as the decay in the magenta pressure values after about GMT 14:32 without simultaneous spectral signatures.

Regime:	Vibratory
Category:	Equipment
Source:	JEM Airlock Depress Vent

JEM Airlock Depress Vent Qualify



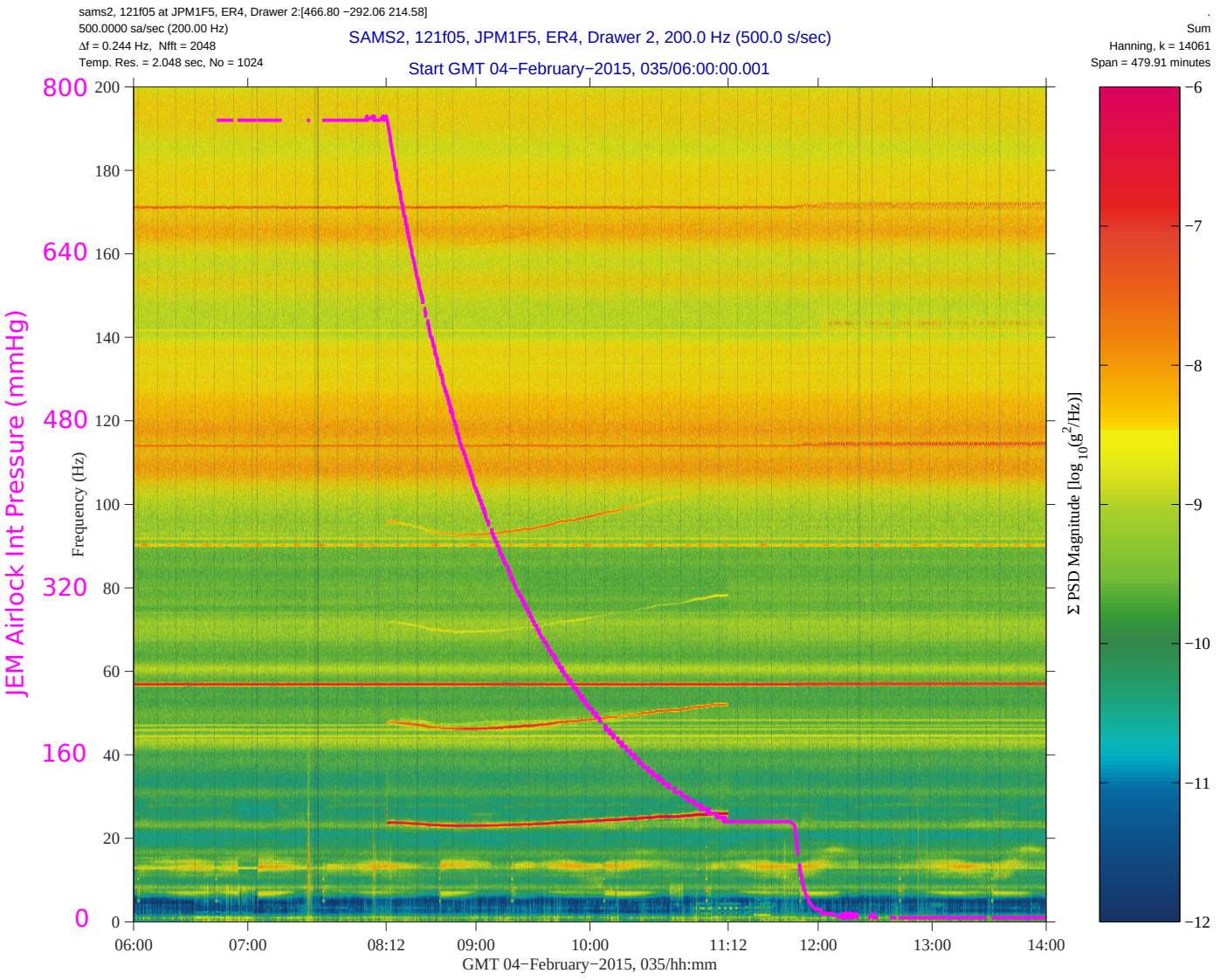
Description	
Sensor	SAMS 121f05 500.0 sa/sec, 200.0 Hz
Location	JPM1F5, ER4, Drawer 2
Plot Type	Spectrogram

Notes:

- This SAMS spectrogram clearly shows the JEM Airlock Depressurization activity between about GMT 08:12 and 11:12.
- The signature for this activity again seems to primarily be the spectral peaks around 24 Hz, with 2nd through 4th harmonics. These are seen as the horizontal red streaks at those frequencies starting at about GMT 08:12.

Regime:	Vibratory
Category:	Equipment
Source:	JEM Airlock Depress Vent

JEM Airlock Depress Vent Qualify



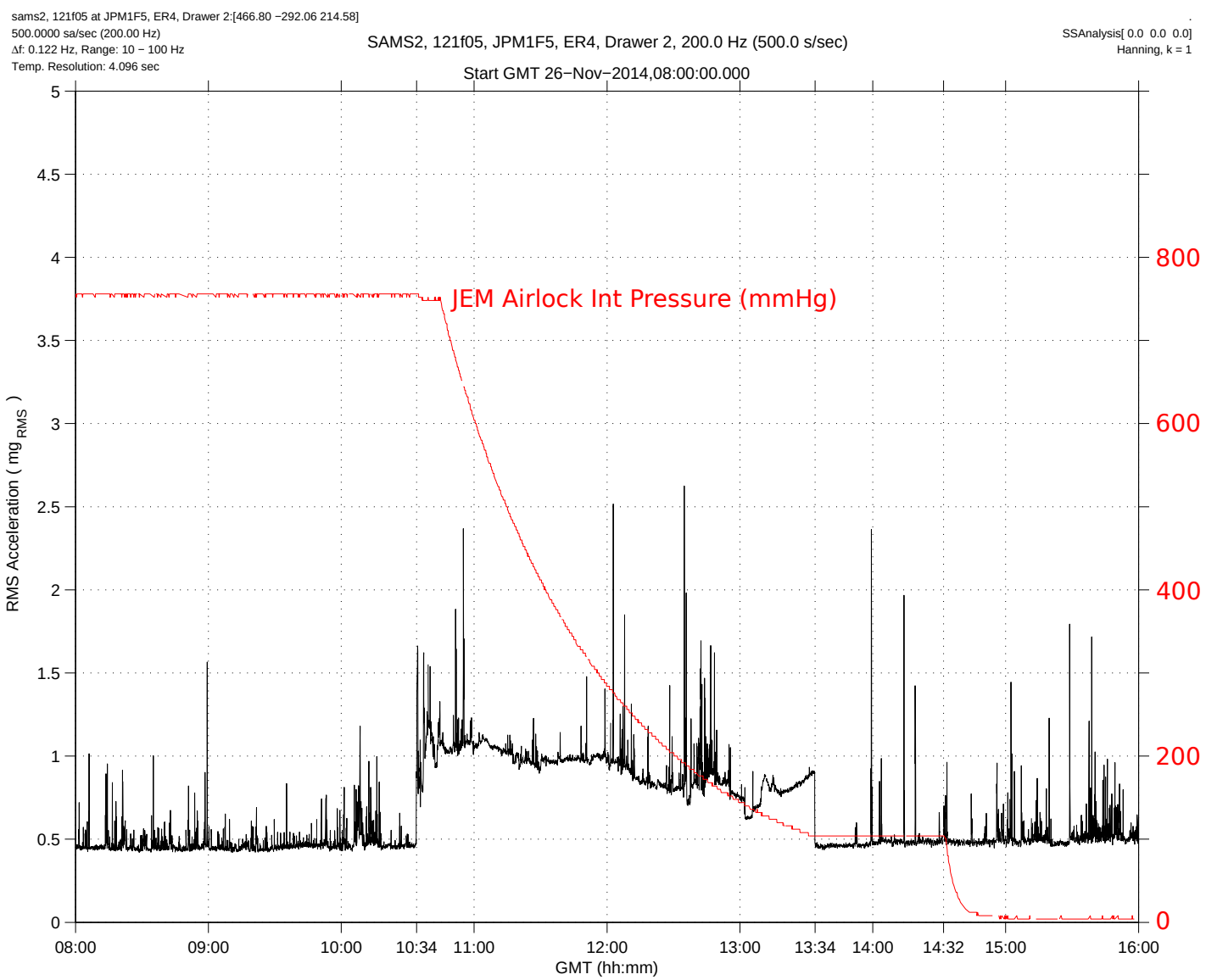
Description	
Sensor	SAMS 121f05 500.0 sa/sec, 200.0 Hz
Location	JPM1F5, ER4, Drawer 2
Plot Type	Spectrogram

Notes:

- This is the same spectrogram as seen unobstructed on the previous page.
- The obstruction here is an overlay of JEM Airlock pressure shown in the magenta trace.
- Again, note the strong correlation between the pressure shown in magenta, and the vibratory spectral signatures mentioned on the previous page (between about GMT 08:12 and 11:12).
- The correlation goes away when the pressure drops below about 100 mmHg. This can be seen as the decay in the magenta pressure values after about GMT 12:00 without simultaneous spectral signatures.

Regime:	Vibratory
Category:	Equipment
Source:	JEM Airlock Depress Vent

JEM Airlock Depress Vent Quantify

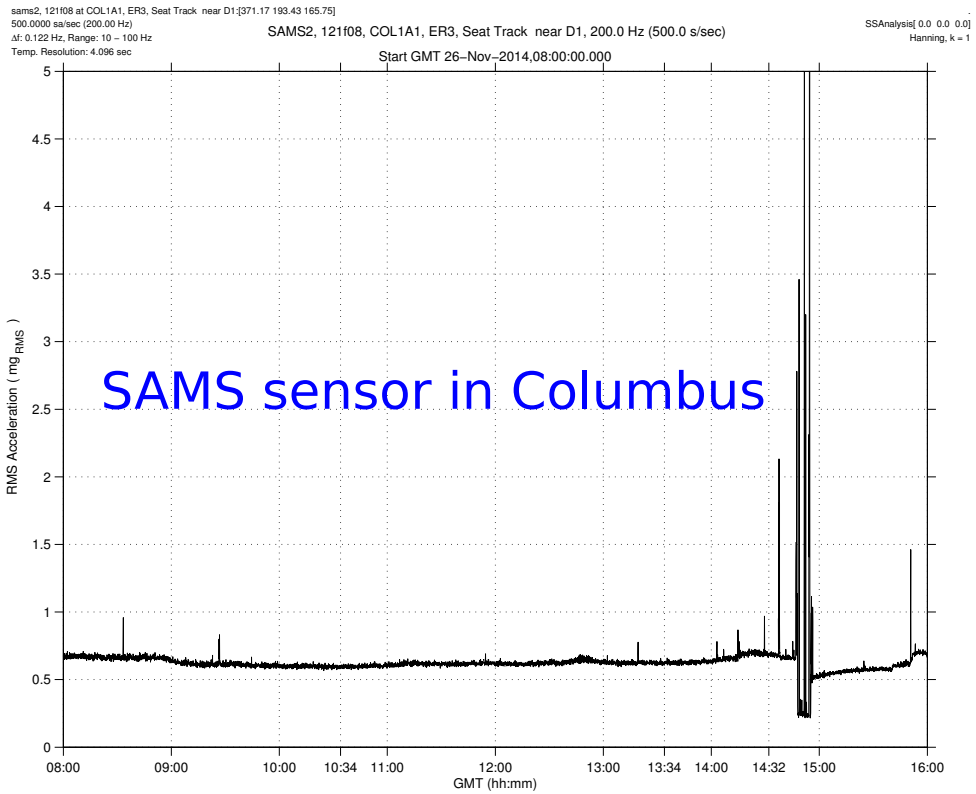


Description	
Sensor	SAMS 121f05 500.0 sa/sec, 200.0 Hz
Location	JPM1F5, ER4, Drawer 2
Plot Type	RMS vs. Time (10 < f < 100 Hz)

Notes:

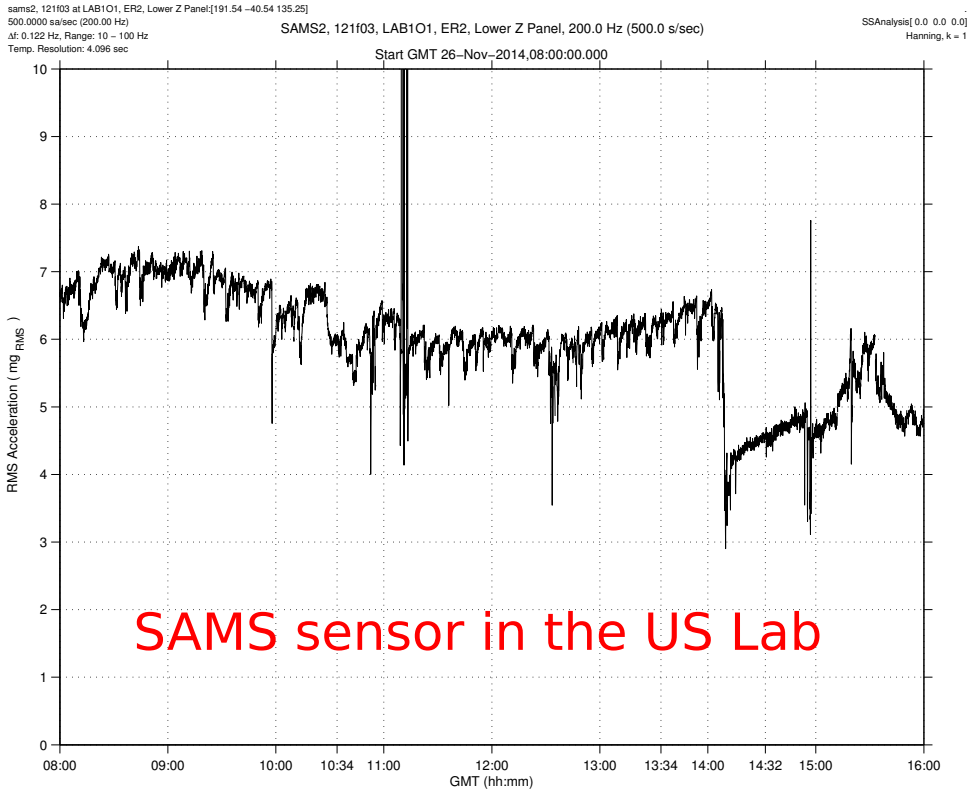
- We now overlay the JEM Airlock pressure values (here shown in red) on top of SAMS RMS values calculated from measurements in the JEM for the frequency range from 10 to 100 Hz.
- This plot reinforces the correlation between pressure and vibrations as we see the pressure decay coincides with a bump up in RMS values between about GMT 10:34 and 13:34.
- Note no discernible correlation after about GMT 14:32, when the pressure starts to drop again below about 100 mmHg.

Regime:	Vibratory
Category:	Equipment
Source:	JEM Airlock Depress Vent

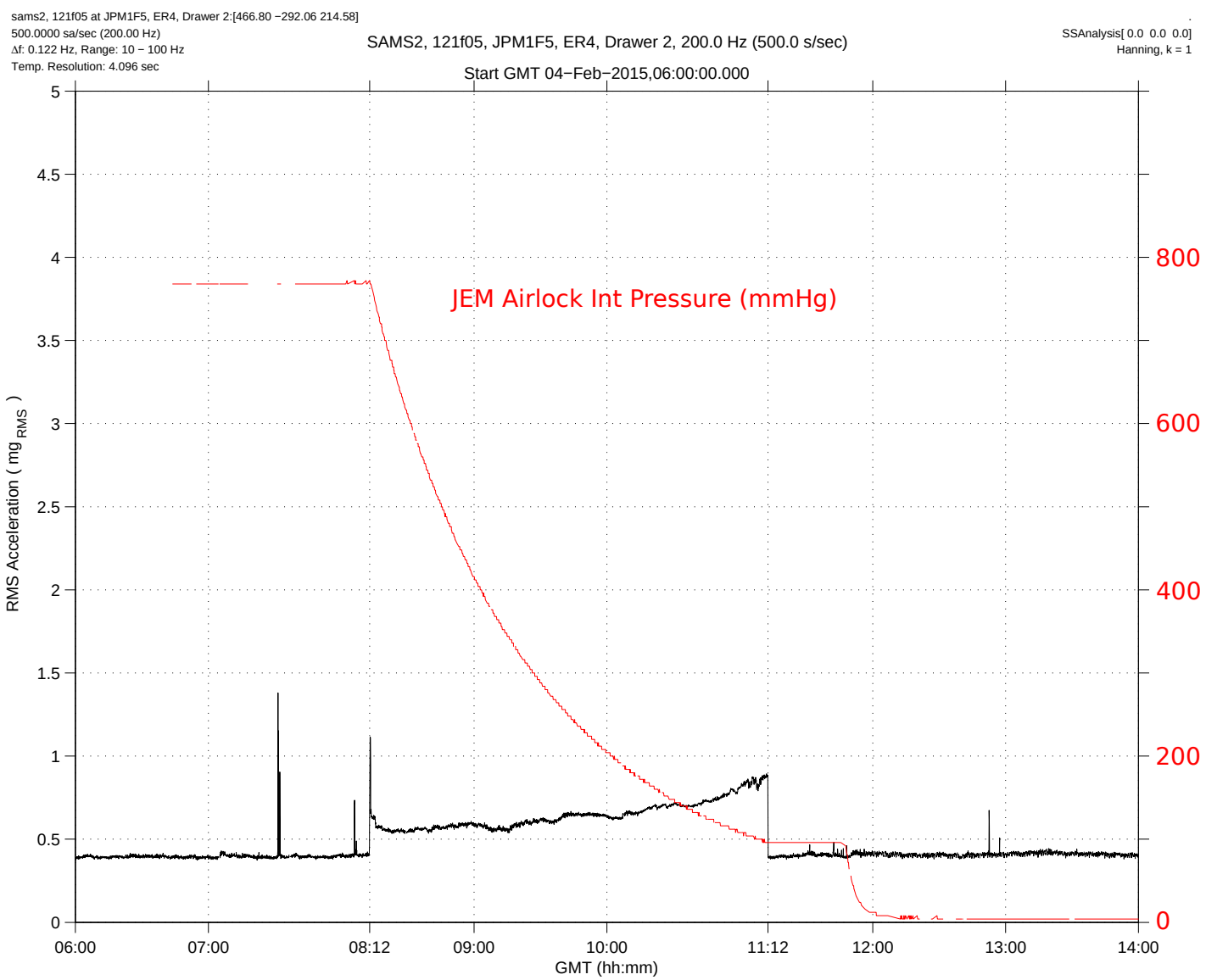


Note that the SAMS sensor in Columbus registered RMS values for the frequency range from 10 to 100 Hz nearly the same as the SAMS sensor in the JEM shown on the previous page.

Note that the SAMS sensor in the US Lab registered RMS values for the frequency range from 10 to 100 Hz about ten times higher than the SAMS sensor in the JEM shown on the previous page.



JEM Airlock Depress Vent Quantify

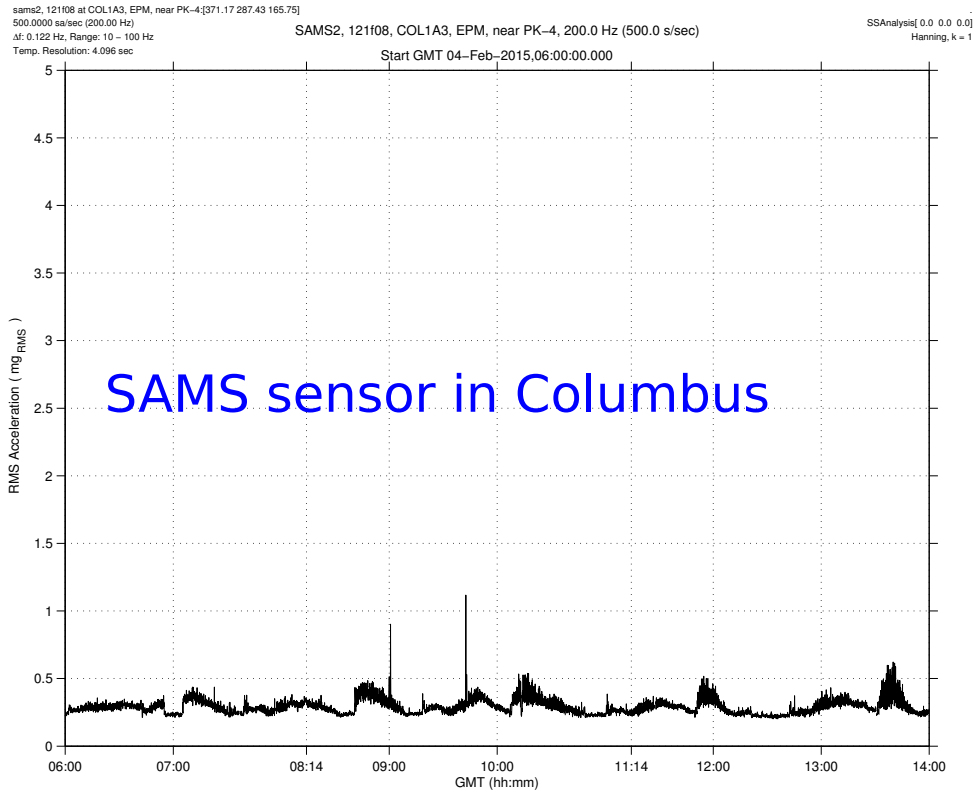


Description	
Sensor	SAMS 121f05 500.0 sa/sec, 200.0 Hz
Location	JPM1F5, ER4, Drawer 2
Plot Type	RMS vs. Time

Notes:

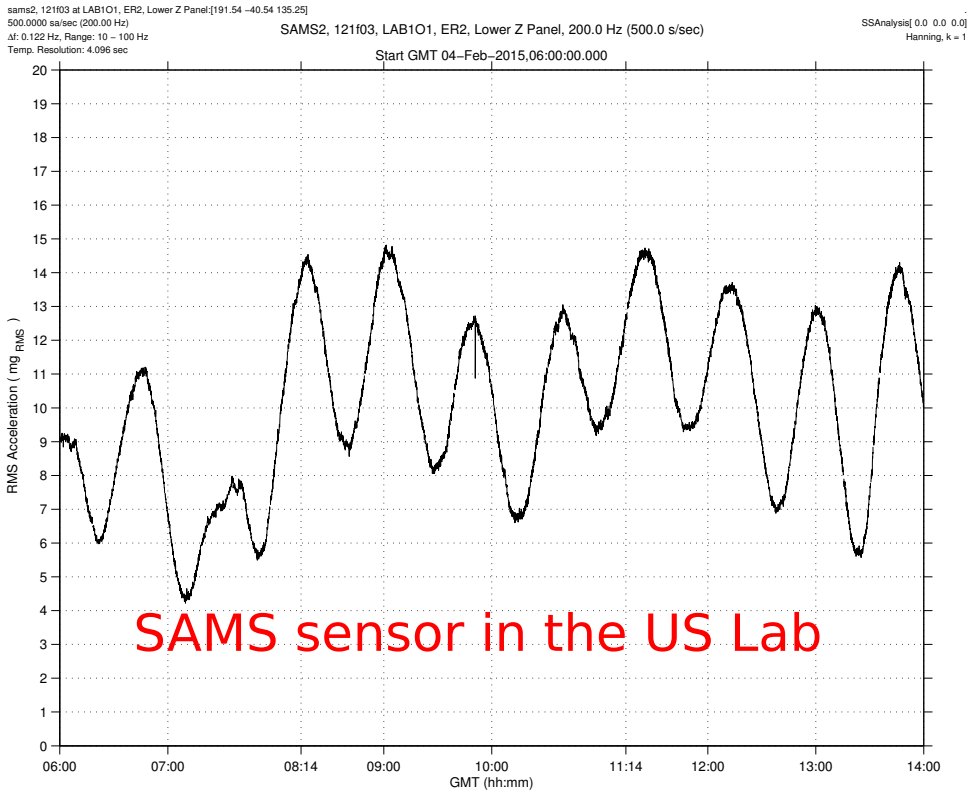
- Again, we overlay the JEM Airlock pressure values (here shown in red) on top of SAMS RMS values calculated from measurements in the JEM for the frequency range from 10 to 100 Hz.
- This plot reinforces the correlation between pressure and vibrations as we see the pressure decay coincides with a bump up in RMS values between about GMT 08:12 and 11:12.
- Note no discernible correlation after about GMT 11:50 or so, when the pressure starts to drop again below about 100 mmHg.
- Also, note how the RMS values for this depressurization activity on GMT 04-Feb-2015 was not as energetic (in terms of RMS vibrations) as the activity on GMT 26-Nov-2014.

Regime:	Vibratory
Category:	Equipment
Source:	JEM Airlock Depress Vent

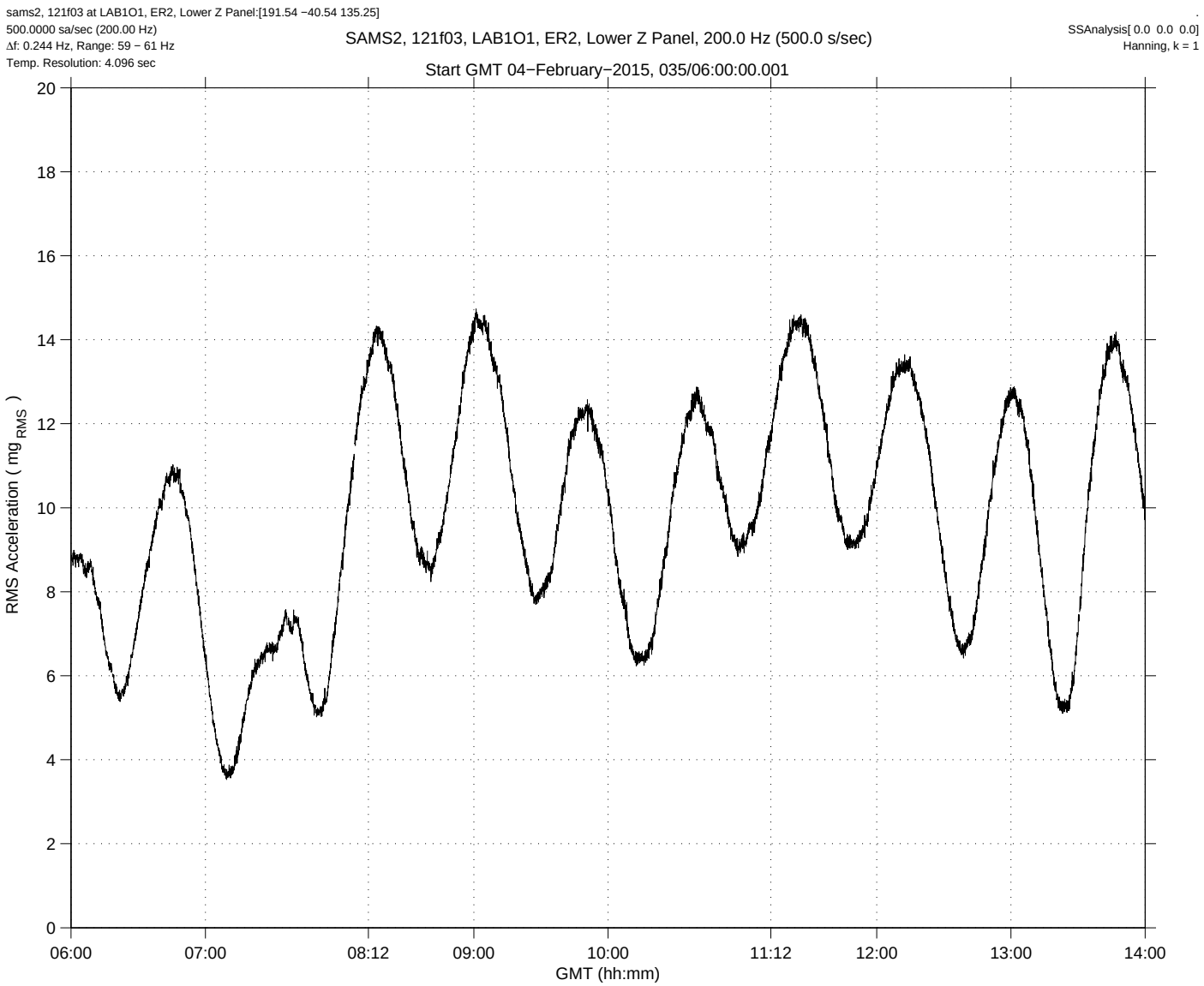


Note that the SAMS sensor in Columbus registered RMS values for the frequency range from 10 to 100 Hz nearly the same as the SAMS sensor in the JEM shown on the previous page.

Note that the SAMS sensor in the US Lab registered RMS values for the frequency range from 10 to 100 Hz up to ~30x times higher than the SAMS sensor in the JEM shown on the previous page.



JEM Airlock Depress Vent Quantify



Description	
Sensor	SAMS 121f03 500.0 sa/sec, 200.0 Hz
Location	LAB1O1, ER2, Lower Z Panel
Plot Type	RMS vs. Time (**59 < f < 61 Hz**)

Notes:

- This plot of RMS acceleration versus time serves to supplement the previous page's plot for the SAMS sensor in the US Lab during the depressurization activity on GMT 04-Feb-2015. This plot puts focus on the narrow frequency band from 59 to 61 Hz.
- We see from this plot that the overwhelming majority of the RMS value comes from a disturbance at about 60 Hz (likely a station refrigerator/freezer resource).
- Not shown here, but as can be seen in a per-axis version of this plot, this strong 60 Hz disturbance near the SAMS 121f03 sensor in the US Lab is aligned primarily with the YZ-plane.

Regime:	Vibratory
Category:	Equipment
Source:	JEM Airlock Depress Vent2